SECRETARY'S ENVIRONMENTAL ASSESSMENT REPORT FOR COASTAL ZONE ACT PERMIT APPLICATION

Re: The Premcor Refining Group Inc.
Delaware City Refinery

April 2008

Introduction

As required by the "Regulations Governing Delaware's Coastal Zone" (Section H.3 [d]) dated May 11, 1999 and amended October 1, 2001, the Secretary is required to make an environmental assessment of the impact(s) of the project on the Coastal Zone of Delaware. This is done by evaluating the project's likely impact on the statutory criteria and making a preliminary determination of the sufficiency of the Offset Proposal. The following is such an environmental assessment of the proposed project described in an application for a Coastal Zone Act (CZA) Permit, received from the Premcor Refining Group Inc. (Premcor), a subsidiary of Valero Energy Corporation, for their Delaware City Refinery.

The fact that DNREC considers an application to be preliminarily, administratively complete does not constitute the Department's position as to whether the application should be approved or denied. That decision will not be made until after the public hearing. The purpose of the Secretary's written assessment is to assist the applicant and the public to focus on issues presented in the application. It constitutes an administrative determination that the application is sufficient to proceed to a public hearing. In addition, should the Department eventually issue the CZA Permit, it does not automatically guarantee the applicant will receive other required permits.

The Proposed Project

Premcor submitted an application on January 2, 2008 for a CZA Permit to install additional air pollution control equipment in the Fluid Catalytic Cracking Unit (FCCU). Premcor had previously applied for a CZA Status Decision on August 21, 2007 for the installation of this air pollution control equipment. It was determined on November 14, 2007 that a CZA Permit would be required due to the increase in nitrates that would ultimately be released into the Delaware River as a result of this project. Premcor has since proposed modifications to its existing WWTP which will address 80-90% of the effluent and has included these modifications as part of this CZA Permit application.

All work associated with the proposed project will occur within the existing boundaries of the Delaware City Refinery (DCR) located at 4550 Wrangle Hill Road in Delaware City. All land included within the DCR boundary is zoned Heavy Industry (HI) by New Castle County. This project is consistent with the zoning and will not disturb any natural habitat in the Coastal Zone. All of the areas proposed for disturbance currently consist of a gravel substrate. The land area required for the installation of this project will total approximately 12,632 square feet (0.29 acres).

This project would achieve the 20ppm limit of NOx emissions agreed upon in Premcor's Settlement Agreement with the State of Delaware. Premcor will install Wet Gas Scrubbing Plus (WGS+) technology downstream of the existing Belco Wet Gas Scrubber

(WGS) and Cansolv Absorber to reduce emissions from the FCCU to 20 ppm of NOx on a dry, O2 free basis. In order to accommodate the WGS+ technology downstream, the WGS stack will be increased in length by 30-40 feet for a final stack height of 225-235 feet above grade.

In contrast to CZA Status Decision 376 which proposed to discharge 219 TPY of nitrates into the Delaware River, this Permit application reduces the amount of nitrates which would be discharged as a result of the 20ppm FCCU NOx pollution control project. In order to achieve this reduction, Premcor proposes modifications to the existing Wastewater Treatment Plant (WWTP) which will be processing and treating the discharge. The first of two aerobic reactor tanks, operated in series, will be converted to a single anoxic reactor tank. This addition of an anoxic step will reduce the amount of nitrates from the WGS+ purge stream from 219 TPY to 33 TPY. The modifications to the WWTP will not require any new buildings or facilities and the modification will occur within the existing footprint of the existing WWTP.

Three new above ground storage tanks will be required for the project. The tanks will store the chemicals required for the treatment of NOx in the FCCU effluent gas at the WGS. Each plastic tank will be 12 feet in diameter by 18 feet tall. These tanks will be located on the east side of the 4th Street access road along with a truck unloading area. The stored materials will be piped to the WGS+ using new, Teflon-lined, carbon steel pipes.

The proposed project will not result in a change in refinery production rates. The purpose of the proposed project is solely to decrease NOx emissions in the FCCU as per Premcor's Settlement Agreement with the State of Delaware.

Sufficiency Statement

This application for a CZA Permit, including supplemental information, has been reviewed by the Department to determine its completeness. After a thorough review of the company's application and file, the Department considers this application to be administratively complete and sufficient for proceeding to public hearing.

Environmental Assessment

Nitrogen Oxides (NOx) refer to two harmful gases: nitric oxide (NO) and nitrogen dioxide (NO2). NOx is a criteria air pollutant as per the Federal Clean Air Act, and is known to cause lung and respiratory tract damage in humans. In combination with other air pollutants, NOx contributes to acid deposition as acid rain, water-quality deterioration, to smog and to global climate change.

The proposed project will result in a decrease of 512.5 TPY of NOx air emissions. This project will not change the composition or the quantity of other permitted allowable air pollutants from the FCCU. Currently, 719.5 TPY of NOx is being emitted from the FCCU. To achieve the 20 ppm of NOx, the quantity of NOx being emitted from the FCCU would be reduced to 207 TPY.

The project will require an additional 250 gallons per minute of process water and will result in an increase of 250 gallons per minute of thermal discharge from the facility. The discharge will remain in compliance with the thermal discharge temperature limit of

110'F as permitted by the facility's NPDES Permit. This additional water will be purchased from the current water supply vendor or consist of recycled water from the existing sour water stripper bottoms. This project does not require additional draw from the existing Delaware River intake or require any new intakes from the Delaware River.

The additional wastewater discharge will flow from the WGS+, through the WWTP to the existing Outfall 601, combine with stormwater and non-contact cooling water discharges, and discharge to the Delaware River at Outfall 001. The nitrate, sulfide and chloride concentrations in the wastewater will also increase as a result of this project. The increases in pollutant loading are summarized below:

Pollutant Loading to the Delaware River (Outfall 001)*

Constituent	Incremental Increase in Concentration (mg/L)	Incremental Increase in Mass (TPY)	Percent Increase over Current Discharge Rates
NO_3^- (as N)	0.06	33	3.0
SO_4^{2-}	12.8	6846	3.1
Cl^-	2	1267	0.08

*Assumes 85% denitrification in modified WWTP

Sulfates, chlorides and nitrogen are naturally occurring in the Delaware River water. Typical concentrations in seawater are 2707 mg/L of SO4, 19812 mg/L of Cl and 0.1-0.3 mg/L of N. Typical concentrations in freshwater are 6.6 mg/L of SO4, 7.0 mg/L of Cl and 0.5-1.0 mg/L of N. The percentage of seawater in the Delaware River at the DCR ranges from 0.25% to 35%. Since the concentrations are similar to that already in the river, no environmental damages are anticipated by the additional nutrients being discharged as a result of this project.

The proposed project will require paving approximately 0.29 acres of gravel surface which will generate approximately 0.60 million gallons per year of additional stormwater. This additional stormwater will be connected to the existing stormwater management system. Stormwater entering this existing system flows to the DCR's WWTP where it is treated and released through Outfalls 601 and 001. The make-up of the stormwater is not anticipated to change as a result of this project.

The project will occur in uplands of the DCR's existing property boundary which is zoned and used for HI operations. The project will not result in the loss of any undisturbed natural habitat or public use of tidal waters. There are no State or Federally threatened or endangered species present on the land-based portion of the project site. The Delaware River adjacent to the project site is utilized by the Atlantic sturgeon, *Acipenser oxyrinchus*, a species of local and regional concern, and the Federally Endangered short-nosed sturgeon, *Acipenser brevirostrum*. Both species spawn upriver of the project site in the spring and summer and then commence post-spawning downstream. No impacts to these species are expected as a result of this project.

The project is not anticipated to generate any noticeable change in heat, glare, noise, vibration, radiation, electromagnetic interference or odors. The facility is currently fenced and guarded for safety purposes and does not allow public access to the Delaware River.

The most likely environmental impacts associated with a mechanical malfunction or human error would be an increase of NOx emissions associated with a malfunction of the WGS+, increase in nitrate loading to the Delaware River associated with a malfunction of the modified WWTP, and/ or an accidental release of the contents of one of the three new storage tanks. Operational failures and human error scenarios will be assessed during unit-specific training sessions, and appropriate response and mitigation procedures will be developed and implemented to address potential events.

Offset Proposal

The offset proposal in this application is in the project itself. The WGS+ technology will reduce 512.5 TPY of NOx from being emitted by the FCCU. The DCR is located within a non-attainment area for ozone. The removal of NOx from the air will reduce a known ozone precursor, therefore, allowing for the geographic area to be closer to compliance with critical environmental air regulations. This reduction of NOx emissions will result in a significant environmental benefit for Delaware's Coastal Zone.

Conclusion

A CZA Permit is required because the application under review represents a pollution control project which could potentially result in some negative environmental impacts. In this application, the greatest benefit is the 512.5 TPY of NOx which would be removed from the air. The consequence of this project is an additional 33 TPY of nitrates which will be discharged into the Delaware River.

The Department finds that the significant decrease in air pollutants associated with the proposed project serves to clearly and demonstrably offset any negative impacts to the Coastal Zone as required by the Regulations.

The company's application is preliminarily administratively complete. All questions in the application have been addressed and the Offset Proposal, to include all air emission reductions and monitoring requirements, has been reviewed and provisionally accepted by the DNREC.

Approved: John A. Hughes

John A. Hughes
Secretary

Date: 4/3/8